

**REMARKS**

Claims 12-35 are currently pending, wherein claims 1-11 have been canceled. Applicants respectfully request favorable reconsideration in view of the remarks presented herein below.

In paragraph 1 of the Office Action (“Action”), the Examiner objects to Fig. 4 because reference numbers 48 and 46 do not correspond to the specification. Applicants hereby amend Fig. 4 to correct the typographical error, thereby addressing the Examiner’s concerns.

In paragraph 2 of the Action, the Examiner objects to claims 1-11, asserting that the embodiments represented in claims 1 and 7 “must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description.” Claims 1-11 have been canceled, rendering this rejection moot.

In paragraph 3 of the Action, the Examiner asserts that claims 1-11 are not entitled to the benefit of the filing data of the priority document because “the claims in your prior foreign application are clearly different and do not teach ‘counting a number’ or ‘number is greater than one’ or ‘number is equal to at least two.’” Again, claims 1-11 have been canceled, rendering this rejection moot.

In paragraph 5 of the Action, the Examiner rejects claims 1-11 under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,525,720 to Baek. Claims 1-11 have been canceled rendering this rejection moot.

In paragraph 6 of the Action, the Examiner rejects claims 12-17 under 35 U.S.C. §102(b) as allegedly being unpatentable over Japanese Publication No. JP 9270936 to Akira (“Akira”). Applicants respectfully traverse this rejection.

In order to support a rejection under 35 U.S.C. §102, the cited reference must teach each and every claimed element. In the present case, claims 12-17 are not anticipated by Akira for at least the reason that Akira fails to disclose each and every claimed element as discussed below.

Independent claim 12 defines a method of driving a display. The method includes, *inter alia*, receiving an input signal having a first period corresponding to a number of lines in the display, determining if the first period is less than a first reference period, and outputting a signal of a first state if the first period is less than the first reference period.

Akira is directed to a synchronization detector circuit for a plasma display panel that reduces power consumption. Specifically, the detector circuit in Akira separates out a horizontal synchronizing signal from the a video signal, which may be a NTSC or PAL/SECAM video signal having different horizontal synchronization frequencies. The frequency of the separated horizontal synchronizing signal is compared to a reference signal from one of two oscillators. One oscillator produces a signal with a NTSC horizontal synchronizing signal frequency, and the second oscillator produces a signal with a PAL/SECAM horizontal synchronizing signal frequency. The synchronization detectors 12 and 14 output a high signal when the frequency of the oscillation signal output from an oscillator and the frequency of the horizontal synchronizing signal are the same and a low signal if they are different. Accordingly, the output  $S_o$  of the OR gate 16 is high if any one of the two inputs is high and low if both the inputs are low. However, nowhere in Akira is there any disclosure or suggestion of determining if the first period is less than a first reference period, and outputting a signal of a first state if the first period is less than the first reference period. To the contrary, Akira only discloses determining if the frequency is equal to the oscillator frequency.

In rejecting claim 12, the Examiner asserts that Akira discloses determining whether the first period is less than a first reference period and outputting a signal of a first state if the first period is less than the first reference period inasmuch as Akira discloses comparing a horizontal signal separated from a video input to a first and second reference signal. This assertion is unfounded for the following reason.

As noted by the Examiner, Akira only determines if the signal is *equal* to the reference signal, not whether or not the signal *is less than* the reference signal. Accordingly, the state of the output signal So of Akira only represents two states, equal to the reference signal or not equal. Nowhere in Akira is there any disclosure of output a first state if the signal is *less than* the reference period as claimed. Therefore, claim 12 is not anticipated by Akira.

Independent claim 14 defines a method of driving a display. The method includes, *inter alia*, receiving an input signal having a first period corresponding to a number of lines in the display, determining if the first period is greater than a first reference period, and outputting a signal of a first state if the first period is greater than the first reference period. As discussed above, Akira only discloses determining if the horizontal synchronization signal is equal to the oscillator frequency. Accordingly, Akira fails to anticipate claim 14 for at least the reason that Akira fails to disclose determining if the period of the input signal is *greater than* a first reference period.

Independent claim 16 defines a method of driving a display. The method includes, *inter alia*, receiving an input signal having a first period corresponding to a number of lines in the display, determining if the first period is less than a first reference period and greater than a second reference period, and outputting a signal of a first state if the first period is less than the first reference period and greater than the second period. Accordingly, claim 16 is not anticipated by Akira for at least the reason that Akira fails to disclose determining if the

period of the input signal is less than a first reference period and greater than a second reference period.

Claims 13, 15 and 17 depend from independent claims 12, 14, and 16 respectively. Therefore, claims 13, 15 and 17 are patentably distinguishable over Akira for at least those reasons presented above with respect to claims 12, 14 and 16. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 12-17 under 35 U.S.C. §102(b).

In paragraph 7 of the Action, the Examiner rejects claims 30 and 33 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,329,975 to Yamaguchi ("Yamaguchi"). Applicants respectfully traverse this rejection.

As discussed above, in order to support a rejection under 35 U.S.C. §102, the cited reference must teach each and every claimed element. In the present case, claims 30 and 33 are not anticipated by Yamaguchi for at least the reason that Yamaguchi fails to disclose each and every claimed element as discussed below.

Independent claims 30 and 33 defines a liquid crystal display device including a timing controller provided with a signal presence determiner for detecting an application of an input signal from an interface, and a method of driving same. Furthermore, the signal presence determiner includes, *inter alia*, an oscillator for generating a reference clock having the same frequency as a horizontal synchronizing signal and a pre-synchronizing signal having the same frequency as a vertical synchronizing signal; a period detector for comparing a data enable signal from the exterior thereof with the reference clock to output a period of the input signal with the aid of a detection reference signal and the pre-synchronizing signal; a period comparator for comparing a period range between a desired maximum value and a desired minimum value of the input signal; and signal presence/absence comparing means for determining a presence/absence of the input signal in response to a pulse number of the

input signal detected within a period range between the maximum value and the minimum value during an application interval of the detection reference signal.

In rejecting claim 30, the Examiner asserts that Yamaguchi discloses a signal presence determiner (Fig. 3, item 11) that includes an oscillator for generating a reference clock having the same frequency as a horizontal synchronizing signal and a pre-synchronizing signal having the same frequency as a vertical synchronizing signal (Fig. item 6), a period detector (Fig. item 11), a period comparator (column 4, lines 45-55) and signal presence/absence comparing means (Fig. 3, items 8 and 9). These assertions are unfounded for the following reasons.

First, the Examiner points to the data enable signal detection circuit (i.e., item 11 of Fig. 3) as being a signal presence determiner, however, nowhere in Yamaguchi is there any disclosure of the enable signal detection circuit comprising an oscillator, a period detector, or a signal presence comparing means as claimed. To the contrary, Yamaguchi discloses that the enable detection comprises either a D Flip-Flop or a one-shot multivibrator as shown in Figs. 4 and 5 respectively.

Furthermore, the Examiner incorrectly points to the selectors (i.e., items 8 and 9 of Fig. 3) of Yamaguchi as disclosing the claimed means for determining a presence/absence of the input signal in response to a pulse number of the input signal detected within a period range during an interval of the detection reference signal. The selectors of Yamaguchi merely select a first (Hsp1 or Vsp1) or second (Hsp2 or Vsp2) signal based on whether or not the output signal from the data enable signal detection circuit is high or low. There is no comparison within the selector circuits.

Finally, the Examiner incorrectly points to the data enable signal detection circuit (i.e., item 11 of Fig. 3) of Yamaguchi as disclosing the claimed period detector. As discussed above, the data enable signal detection circuit of Yamaguchi comprises either a D Flip-Flop

or a one-shot multivibrator (see column 5 and Figs. 4 and 5 of Yamaguchi). Nowhere in Yamaguchi is there any disclosure of the data enable signal detection circuit comprising means for comparing a data enable signal with a reference clock to output a period of the input signal with the aid of a detection reference signal and the pre-synchronizing signal as claimed.

For any one of the reasons discussed above, Yamaguchi fails to anticipate independent claims 30 and 33. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 30 and 33 under 35 U.S.C. §102(b).

In paragraph 9 of the Action, the Examiner rejects claims 18-29 under 35 U.S.C. §103(a) as allegedly being unpatentable over Akira. Applicants respectfully traverse this rejection.

It order to support a rejection under 35 U.S.C. §103, the Office Action must establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some motivation or suggestion to modified the cited reference. Second, there must be a reasonable expectation of success. Finally, the combination must teach each and every claimed element. In the present case, claims 18-29 are not rendered unpatentable over Akira because the Office Action fails to establish a *prima facie* case of obviousness as discussed below.

Independent claim 18 defines a method of driving a display. The method includes, *inter alia*, receiving a vertical synchronizing signal, generating an intermediate signal from the vertical synchronization signal, the intermediate signal indicating whether the vertical synchronization signal has an error, and outputting a desired video signal to the display when the error is detected.

In rejecting claim 18, the Examiner asserts that it would have been obvious to one skilled in the art “that the horizontal synchronization signal in Akira could have been any

periodic display related signal and therefore it would have been obvious to use a ‘vertical synchronization signal isolation part’ instead of the ‘horizontal synchronization signal isolation part’ because the principle of operation would not change.” These assertion is unfounded for the following reasons.

First, the horizontal synchronization signal of Akira is transmitted with the video signal. Accordingly, is could not have been any periodic display related signal as only specific signals are transmitted with a video signal, based on the standard with which the signal complies. Furthermore, the mere fact that a reference can be modified does not in and of itself render the resultant modification obvious unless the prior art also suggested the desirability of the modification (See MPEP §2143.01). Nowhere in Akira is there any disclosure or suggestion of the desirability of using any signal other than a horizontal synchronization signal. Accordingly, absent proper motivation to modify the teachings of Akira the rejection of claim 18 is improper.

In addition, Akira fails to disclose or suggest generating an intermediate signal, the intermediate signal indicating whether the vertical synchronization has an error. Even if Akira were modified as suggested by the Examiner, the modification would still fail to render claim 18 unpatentable because the modification fails to disclose each and every claimed element. Accordingly, claim 18 is patentably distinguishable over Akira.

Independent claim 24 defines a method of driving a display. The method includes, *inter alia*, receiving a data enable signal, generating an intermediate signal from the data enable signal, the intermediate signal indicating whether the data enable signal has an error, and outputting a desired video signal to the display when the error is detected.

In rejecting claim 24, the Examiner asserts that Akira discloses a method as claimed, in as much as Akira discloses comparing a horizontal synchronization signal with two reference signals and outputting a first signal if the horizontal synchronization signal is equal

of either of the two references and a second signal if it is not equal. However, nowhere in Akira is there any disclosure of receiving a data enable signal, much less generating an intermediate signal based on the data enable signal. Accordingly, independent claim 24 is patentably distinguishable over Akira.

Claims 17-23 and 25-29 variously depend from independent claims 18 and 24. Therefore, claims 17-23 and 25-29 are patentably distinguishable over Akira for at least those reasons presented above with respect to claims 18 and 24. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 18-29 under 35 U.S.C. §103(a).

In paragraph 10 of the Action, the Examiner rejects claims 31, 32, 34 and 35 under 35 U.S.C. 103(a) as allegedly being unpatentable over Yamaguchi. Applicant respectfully traverses this rejection.

Claims 31, 32, 34 and 35 variously depend from independent claims 30 and 33. Therefore, claims 31, 32, 34 and 35 are patentably distinguishable over Yamaguchi for at least those reasons presented above with respect to claims 30 and 33. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 31, 32, 34 and 35 under 35 U.S.C. §103(a).

In view of the above, each of the presently pending claims in this application is in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.



If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: January 7, 2005

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Rebecca Goldman Rudich', is written over a horizontal line.

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**AMENDMENTS TO THE DRAWINGS:**

The attached sheet of drawings includes changes to Fig. 4. This sheet, which includes Fig. 4 replaces the original sheet including Fig. 4. In Fig. 4, reference numerals 48 and 46 have interchanged.

Attachments:           Replacement Sheet  
                          Annotated Sheet Showing Changes